QUALITY ASSURANCE REPORT/QUALITY CONTROL REPORT

EE/QA/PR/ 11 /2022-23, DATE: 15.02.23		
Name of Work	:	Development of park and Construction of Watchmen room at Bagalgunte 12th cross, Nagalakshmi Temple Park in Dasarahalli Zone. Ward No.14 (Estimated cost – 150.00 Lakhs)
Job Code	:	014-20-000095
Bill No.	:	1st & Final Bill
Type of Test Performed	:	Rebound Hammer test As per IS13311-(2)-1992
Materials on which Tests Was Performed	:	1. Kerb stone (M15 grade)
Officers present during inspection	:	1. Sri. Venkateshappa AE – Ward no 14 2. Sri. Jayaraju.K.S. AEE-Quality Assurance
Project Management Consultants	:	M/s NEWZEN CONSULTANT BANGALORE
Observations	:	➢ NDT (Rebound hammer test) was conducted in presence of AE (Ward no 14) along with Project Management Consultants representative. ➢ The Rebound Hammer Test was conducted randomly on Kerb (M15) are recorded by the PMC consultants. ➢ The readings of Rebound Hammer Test are tabulated and analysis of test results done by PMC is here by furnished. ➢ During visual inspection it was intimated by Engineer in charge of work & PMC that items pertaining to gym equipment's & children play equipments in this bill have been executed. ➢ However certificate of warranty & test certificate obtained from the manufacture related to gym equipments & children play equipments. ➢ Neither request for inspection was raised nor file was submitted to QA office during the execution of the work. Therefore QA Division could not inspect the work during progress of work. ➢ This respective bill includes item of **Granite stone** for which test report obtained from Bangalore University for dry density, water absorption, specific gravity, moisture content, tensile strength and Moh's hardness. ➢ The location wise test results are reproduced in the tables shown below.
Test Locations	:	1. Location 1: Kirloskar Layot park 2. Location 2: Bagalgunte Lake Park 3. Location3: MEI Layout Park

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ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ ದಾಸರಹಳ್ಳಿ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

15/2/2023

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ ದಾಸರಹಳ್ಳಿ
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Table-01: Rebound Hammer Test Results for Location-1

Sl. No.	Member	Rebound Hammer Number	Average reading	Compressive Strength (N/mm2) for 28 days	Impact Direction
Sample Tested Location at Kirloskar Layout park					
1	Kerb Stone (M15)	26	26.67	18.00	Horizontal
2		28			
3		26			
4		26			
5		28			
6		26			

Table-02: Rebound Hammer Test Results for Location-2

Sl. No.	Member	Rebound Hammer Number	Average reading	Compressive Strength (N/mm2) for 28 days	Impact Direction
Sample Tested Location at Bagalgunte Lake Park					
1	Kerb Stone (M15)	24	23.66	16.00	Horizontal
2		26			
3		22			
4		24			
5		22			
6		24			

Table-03: Rebound Hammer Test Results for Location-3

Sl. No.	Member	Rebound Hammer Number	Average reading	Compressive Strength (N/mm2) for 28 days	Impact Direction
Sample Tested Location at MEI Layout Park					
1	Kerb Stone (M15)	22	23.33	16.00	Horizontal
2		22			
3		24			
4		24			
5		22			
6		26			

Test Report for Granite stone Sample

SI NO	Test conducted	Test results	Requirments as per IS:14223,Part-1:1995, Table.1	Reference
1	Dry Density	2.635 g/cc	2.60-2.68	-
2	Water Absorption	0.38%	0.50, max	IS:14223(partI):1995
3	Specific Gravity	2.75	2.75, min	IS9143-1979
4	Moisture Content	0.05%	0.15,max	IS 13030-1991
5	Tensile Strength	141.0 Kg/cm^2	90.0 Kg/cm^2,min	IS 13365(partI)-1998
6	Moh's Hardness	6.5 on a scale of 10	6-7	-

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Conclusion:

The file containing **1st & Final Bill** has been submitted for the above work to QA department on 12.01.2023 requesting for spot inspection. Engineers of QA/QC division have visited the work spot on 24.01.2023.

During the inspection, it was understood that the items found in the bill, have been executed by the contractor from the documents provided by PMC team and from the file submitted.

PMC team was instructed to assess the strength of concrete used for Kerb stone (M15) by Rebound Hammer Test .The Rebound hammer test were conducted by PMC in presence of engineer in charge of work.

From the test results furnished by PMC consultants, it is concluded that the results of the samples collected are in accordance with the standards/ specifications mention in the IRC codes. However, the results submitted by the PMC have been reproduced here with for further needful action. The results checked by QA/QC relates only for item tested in the particular location randomly.

Further, QA/QC directs the PMC and Engineer in-charge of the work that all materials used for the work shall be inspected, tested and accepted as per the relevant specifications before incorporation in the work. The frequencies and methods of sampling and testing materials, including those required for definite purpose and not covered by MORT&H specifications shall be in accordance to the relevant IRC or BIS or AASHTO/ASTM/BS standards in order of priority

This respective bill also includes installation of gym equipments & children play equipments at various locations. As request for inspection was not made during the execution of these items of work, QA division could not inspect during progress of work. However, randomly gym equipments & children play equipments were visually inspected.

It was also instructed to engineer in charge of work to take necessary action to get it certified from competent authority regarding items pertaining to gym equipments & children play equipments certified as per specification.

The concerned Engineer in charge of the work shall follow the direction issued by Chief Commissioner Letter number dated 01.08.2022 and 14.09.2022 and take necessary action as appropriate in accordance with the law.

Note: -

This report by QA/QC is pertaining to the work carried out in **1st & Final Bill** only.

Engineer in charge of work shall display details of work, work code, cost of project, start and completion date, and information of Engineer in charge of work with contact numbers at work spot.

Engineer in charge of work and Agency shall ensure that if any damages or defects occur pertaining to the executed work within the Defect Liability period (DLP), The same shall be rectified immediately on top priority without fail.

15-2-2023

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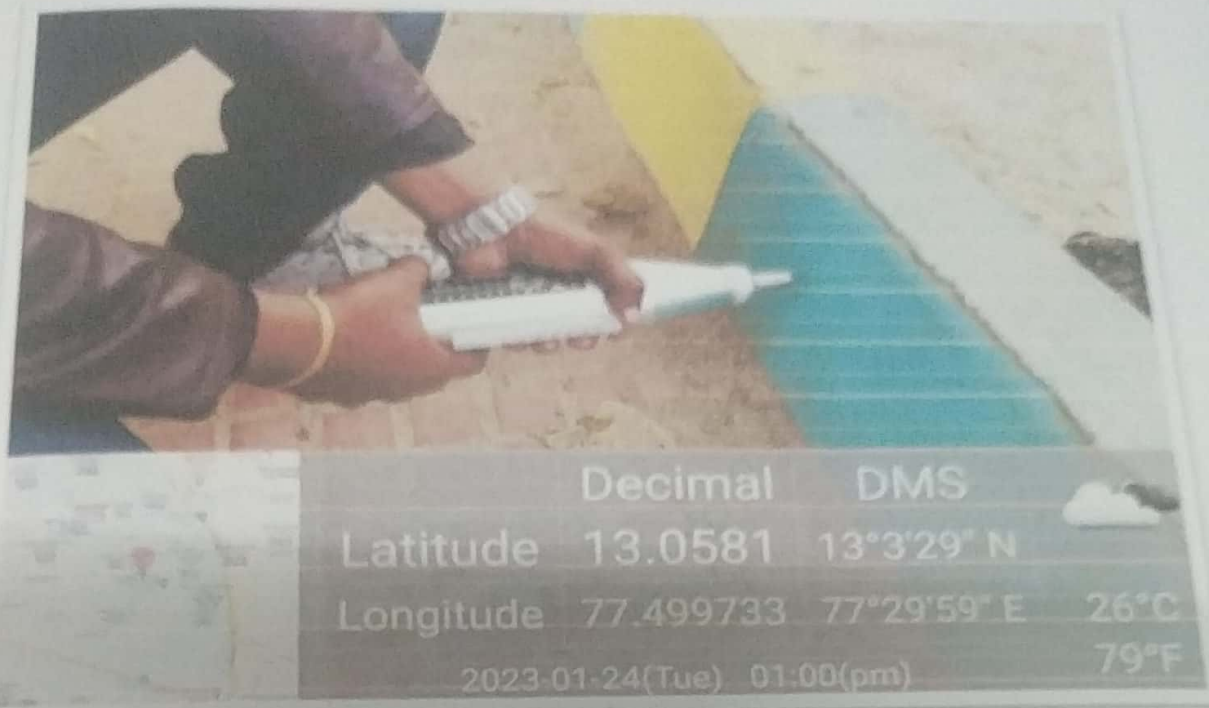
Location 1: Kirloskar Layot park



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Location 2: Nagalgunte Lake Park

Location 3: MEI Layout Park

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